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UNITED STATES DEPARTMENT OF AGRICULTURE
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BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
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In cooperation with State, Federal and Other Agencies

COTTON INSECT CONDITIONS FOR WEEK ENDING JULY 30, 1948
(Eleventh Cotton Insect Survey Report for 1948)

No reports of shortages of insecticides for cotton insect control.

The cotton leafworm has now been reported from 10 counties, 8 in Texas and 2 in Florida. One year ago at this date it had been found in only 3 counties in Texas and in no other State.

The heaviest boll weevil infestations of the year were reported in many counties in Texas, Oklahoma, Arkansas, Louisiana, Mississippi, Alabama, Florida, Georgia, and the Carolinas.

Boll weevils are on the move. Now is the time to protect the bolls, if weevils are present, by the application of insecticides. The proper use of insecticides for boll weevil control during August pays good returns on the investment. All cotton fields should also be examined frequently for the bollworm, cotton leafworm, cotton aphid, red spider, and other pests. Insecticides should be used promptly when they are needed.

BOLL WEEVIL

TEXAS: Most of the cotton in the southern half of the State is mature and beyond the stage of being attractive to insects. Boll weevils are increasing rapidly in many north central and central counties. Insecticides are needed in many fields. The average infestation in 668 fields in 35 counties was 21%. No punctured squares were found 87 of the fields examined. In 406 fields the infestations ranged up to 25%; in 82 fields from 26 to 50%; and in 93 fields more than 50% of the squares were punctured. The weevil infestations increased greatly in most fields in McLennan and Falls Counties. The average infestation was 37% punctured squares as compared with 25% the past week. Damage in many fields will be heavy unless insecticides are applied for weevil control.

OKLAHOMA: Continued mild temperatures and local rains over most of the eastern half of the State were favorable for weevil development. Weevils are emerging in large numbers from infested squares and very few immature stages are being killed by hot weater or parasites. The weevil situation is serious in Pittsburg, Atoka, Bryan, Choctaw, McCurtain, Coal, Hughes, Okfuskee, and LeFlore Counties. The average infestation in 123 fields in 18 counties was 22% punctured squares. No weevils were found in 11 fields in McClain, Jefferson, Love, Carter, and Garvin Counties. In 46 fields the infestation ranged up to 10%; in 22 fields from 26 to 50%; and in 16 fields more than 50% of the squares were punctured.

LOUISIANA: Cotton is maturing rapidly throughout the State. Open bolls have been reported in the northern areas. Poisoning is being continued in some sections for the protection of young bolls. The average infestation in 284 fields in 19 parishes was 21% punctured squares as compared to 20% last week and 14% two weeks ago and with 19% in 1947 and 68% at this time in 1946. No punctured squares were found in 22 fields examined. In 104 fields the infestations ranged up to 10%; in 74 fields from 11 to 25%; in 47 fields from 26 to 50%;

and in 37 fields more than 50% of the squares were punctured.

ARKANSAS: The average boll weevil infestation in 75 fields in 6 southeastern counties was 16% as compared to 8% the previous week and 7% two weeks ago and with 30% in 1947 and 37% in 1946. No punctured squares were found in 21 fields. In 19 fields the infestations ranged up to 10% punctured squares; in 15 fields from 11 to 25%; in 16 fields from 26 to 50%; and in 4 fields in Chicot and Desha Counties more than 50% of the squares were punctured.

"A second brood of boll weevils will soon mature in infested fields of old cotton in southern and western Arkansas. Migration of this new brood of weevils may begin the week of August 2. Uninfested fields of young cotton are likely to be invaded at this time. Dusting to control migrating weevils is of particular value in protecting young bolls from damage. Heavy dusting for boll weevils usually causes aphid outbreaks unless they are controled. This year aphids are common in some areas where no dusting has been done. Therefore, if dusting for weevils is necessary.precautions should also be taken for aphid control." (Charles G. Lincoln, July 27)

MISSISSIPPI: "Reduction in fruiting and an increase in the population of boll weevils has caused the infestation to rise in Mississippi during the past week. Examinations on 482 farms in 48 counties showed 313 infested with an average on the infested farms of 21%, which compares with 16% last week and 19% a year ago. The crop is maturing rapidly in the southern part of the State. Picking is in progress in many counties and ginning has already started in a few areas. Weevils have been generally scarce in the southern section especially and most reports show plants heavily bolled to the top, with hardly any damage. For example, one farm in George County had 5% infestation and 2 farms in Wayne showed no weevils at all, with the crop mature. Jones County, with 10 fields ranging from 23 to 70% infestation, is the only southern county reporting high infestations this week." (Clay Lyle, August 2)

The weevils are continuing to spread in the Delta as 53% of the fields examined last week had punctured squares as compared to 48%, 42% and 36% during the 3 previous weeks. Of the 482 fields examined by entomologists 323 were in the 19 Delta Counties. The average percent of squares punctured in the 171 infested fields examined in the Delta was 21% as compared to about 16% during the 2 previous weeks. No boll weevils or punctured squares were found in 152 fields including all of the 10 fields examined in Tunica County. Most of the fields examined in Bolivar, Coahoma, DeSoto, Humphreys, LeFlore, Quitman, and Sunflower Counties were still free of weevils. The heaviest infestations were again reported from Yazoo County where all of the nine fields examined were heavily infested---five with more than 75% punctured squares. Other Delta fields with more than 50% punctured squares were reported from Carroll, Humphreys, Issaquena, Quitman, Sharkey, and Warren Counties. Of the 171 infested fields, 60 had less than 10% of the squares punctured; 63 had infestations ranging from 11 to 25% punctured squares; 31 from 26 to 50% punctured squares, and 17 with more than 50% punctured squares. B. J. Young, Delta and Pine Land Co. in the southern part of Bolivar County, reports boll weevils in 367 of 375 fields examined but no field had more than 50% punctured squares and only 5 fields had as many as 30% punctured squares.

ALABAMA: "The boll weevil infestation has become serious within the last two weeks over the southern two-thirds of the State. Rain has fallen rather continuously over most parts of the State since the first week in July. Farmers seem to be doing about as much dusting as they can considering weather conditions. Cotton in the southern part of the State has about reached the mature stage and the main problem now is to protect the top crop of bolls." (W.A. Ruffin, July 30)

FLORIDA: Weather in Alachua County and adjacent areas has been favorable for the boll weevil and unfavorable for weevil control. Although the boll weevils are increasing rapidly in numbers it is apparently too late for them to cause serious damage to cotton crops where reasonable effort is made to control them by the use of insecticides. (P. W. Calhoun, August 2)

GEORGIA: The boll weevil infestations increased considerably in all sections of the State. In the examination of 83 fields in 22 counties there were 32 fields in which the boll weevil infestations did not exceed 10% punctured squares. In 22 fields the infestations ranged from 11 to 25% punctured squares; in 16 fields the range was between 26 and 50% punctured squares; and in 13 fields more than 50% of the squares were punctured. The highest infestations were reported in Mitchell, Randolph, Lowndes, Dougherty, Dooly, Tift, and Burke Counties. Other counties in which fields were examined that had more than 25% of the squares punctured were Pike, Upson, Lee, Pulaski, and Terrell Counties. Only 3 of the 27 fields examined in the northeastern section of State had more than 25% punctured squares. These 3 fields are in Burke County. Most of the cotton in the Piedmont area is still susceptible to serious weevil injury.

SOUTH CAROLINA: Weather conditions have been very unfavorable for cotton during the past two weeks. Hot weather and lack of moisture have caused heavy shed in many fields expecially on light sandy soils. Boll weevils are now moving from field to field. Near the Pee Dee Experiment Station 47 weevils were collected from a screen trap during the week. The average infestation in 98 fields in 24 counties in the lower and central sections of the State, where the cotton is mature and very few squares present, was 70%. In 22 fields the infestation ranged from 26 to 50% punctured squares and 76 fields more than 50% of the squares were punctured. In areas where rains have occurred and moisture is plentiful, the cotton is still growing and the dusted fields are in full bloom, while undusted fields have very few or no blooms.

NORTH CAROLINA: General rains occurred over most of the eastern counties the latter part of the week which were beneficial to the cotton crop. Very few fields in southern counties are squaring. Most northern counties are past the peak of fruiting. The migration of weevils has begun in the southern counties. Boll weevil infestation was found in all of the 107 fields examined in 19 counties at an average rate of 31% punctured squares. In 40 fields the infestation ranged up to 10%; in 18 fields from 11 to 25%; in 15 fields from 26 to 50%; and in 34 fields in Wake, Harnett, Cumberland, Hoke, Sampson, Wayne, Robeson, and Scotland Counties more than 50% of the squares were punctured. The northern counties along the Virginia line have had very few weevils so far though many growers have persisted in dusting. This is true in Halifax, Hertford, and Northampton in particular.

COTTON FLEAHOPPER, TARNISHED PLANT BUG, RAPID PLANT BUG, AND OTHER MIRIDAE

TEXAS: Cotton fleahopper infestations remain low. The average infestation in 639 fields in 38 counties was 7 fleahoppers per 100 terminals as compared with 8 last week.

OKLAHOMA: Cotton fleahoppers have appeared in large numbers in Jefferson, Garvin, Pottawatomie, and Lincoln Counties.

ARKANSAS: Cotton fleahopper and tarnished plant bugs continue to blast squares in the eastern part of the State. The outbreak is fading. (Charles G. Lincoln)

MISSISSIPPI: In the examination of 323 cotton fields in the Delta no cotton fleahoppers were observed. The tarnished plant bug was reported from 18 fields, the rapid plant bug from 39 fields, and another mirid, Neurocolpus nubilus, was reported in 22 fields.

NORTH CAROLINA: Cotton fleahoppers were observed in many fields but were heaviest in Halifax and Harnett Counties. (J. T. Conner, Jr., July 31)

BOLLWORM

Except in Texas most of the reports regarding "bollworms" in cotton during June and July were based on the appearance of insect other than the bollworm, Heliothis armigera (Hbn.). Among the insects that were destroying cotton squares and bolls in the same manner as the bollworm destroys them were the tobacco budworm, Heliothis virescens (F.), the fall armyworm or southern grassworm, Laphygma frugiperda (A & S), the granulate cutworm, Feltia subterranea (F.), the cotton square borer, Strymon melinus (Hbn.), and the yellow-striped armyworm or cotton boll cutworm, Prodenia ornithogalli Guen. Wherever lepidopterous larvae or "worms" are found feeding on bolls, squares or leaves of cotton, they should be collected, placed in vials containing alcohol and mailed to the Division of Cotton Insects for identification.

TEXAS: Bollworms are present in damaging numbers in many fields but on the whole they are decreasing in the central portion of the State. Apparently, the first generation of the bollworm on cotton is about over in most fields, especially in fields of early planted or mature cotton. Late-fruiting or rank, succulent cotton should be watched closely for a new crop of eggs and small worms.

OKLAHOMA: Bollworm infestations are increasing rapidly. Eggs were found in practically all fields examined in the eastern portion of the State, ranging from 0 to 4 per plant. Bollworms in all stages of development were also noted and a few were entering bolls. (C. F. Stiles, July 31)

LOUISIANA: No serious bollworm infestation have been reported.

ARKANSAS: Boll worm eggs are much less abundant on corn silks than is usual at this season. A few eggs and small worms can be found on cotton. (Charles G. Lincoln)

MISSISSIPPI: No reports of bollworm injury to cotton.

ALABAMA: "Last year at this time the bollworm was causing in most fields as much damage as boll weevil. I have not observed any fields damaged this year. I have not had a single report of farmers having dusted cotton for the control of bollworm." (W. A. Ruffin, July 30)

NORTH CAROLINA: Lepidopterous larvae (probably bollworms) are on the increase especially in the northern counties. (J.T. Conner, Jr. July 31)

COTTON LEAFWORM

TEXAS: No additional counties were reported infested with cotton leafworms during the week. They have been previously reported from 8 counties.

FLORIDA: The first cotton leafworms were found in two cotton fields near Evinston in Marion County on July 28 by P. W. Calhoun. On August 2 he reported cotton leafworms in one field in Alachua County. The first cotton leafworms reported in Florida in 1947 were found in Walton County.

MISCELLANEOUS INSECTS

NORTH CAROLINA: "Light to serious infestations of red spiders were observed in all areas especially in Nash, Pitt, Wayne, Cumberland, and Sampson Counties. In demonstration fields, where 3 applications for boll weevil control were used and the dusts contained 40% sulfur, infestation was neither checked nor controlled. Recent rains in this area no doubt will aid in control of red spider. In many advanced fields, leaf drop caused by red spider would be welcomed at this time." (J. T. Conner, Jr., July 31)

MISSISSIPPI: In the examination of 323 cotton fields in the Delta the cotton aphid was reported in 39 fields as compared to 25 fields the previous week. There were no reports of grasshoppers or thrips causing injury to cotton.

GEORGIA: The southern grassworm or the fall armyworm, *Laphygma frugiperda*, is now plentiful over large areas in the southern half of the State. They have caused and are causing considerable damage to cotton by feeding on the bolls.

OKLAHOMA: The "barber pole" caterpillar *Noctuelia rufofascialis* (Step.), was collected from cotton near Temple, Cotton County, Oklahoma on July 23 by G. H. Johnson. The identification was made by H. W. Capps of the Division of Insect Identification. This is the first report of this insect during 1948. In past years it has frequently been mistaken for the pink bollworm.

LOUISIANA: Lepidopterous larvae or "worms" attract much attention of cotton because of the amount of damage each causes. On July 12 R. C. Gaines, Tallulah, La. collected 36 "worms" from cotton that were identified by H. W. Capps as representing five different species of insects. The collection included 28 specimens of the tobacco budworm, *Heliothis virescens*, 3 of the bollworm, *Heliothis armigera*, 2 of the cotton boll cutworm or yellow-striped armyworm, *Prodenia ornithogalli*, 2 of the cotton square borer, *Strymon melinus* and one of the salt-marsh caterpillar, *Estigmene acrea*.

VIRGINIA: On July 12 W. Don Fronk, Assistant Entomologist, submitted some thrips collected from cotton plants at Holland. These thrips were identified as the flower thrips, *Frankliniella tritici* (Fitch).

INSECTS ON IRRIGATED COTTON OF THE SOUTHWEST

ARIZONA: Large cotton acreages continued to be dusted or sprayed throughout the Salt River Valley. The injurious hemipterous insect populations remain low as a whole. Approximately one half of the injurious insects collected in last week's sweepings in cotton fields were *Lygus* nymphs.

Injurious hemipterous insect populations on cotton are increasing in most cotton fields throughout the Santa Cruz Valley. *Lygus* nymphs have been collected in some fields. Bollworms are appearing in damaging numbers in the Sahuarita area and insecticides are now being applied for their control. Dusting for bollworm control is also under way in the Continental area. Bollworm eggs and small worms were noted in the Marana district.

Injurious hemipterous insects increased in cotton fields in the Safford Valley. Population counts ranged up to 36 per 100 net strokes. Lygus are the predominating insects present. Red spider mites are also threatening in this Valley and some dusting is being done for their control. Red Spider mites are also present in some fields in Willcox County.

NEW MEXICO: Injurious hemipterous insect populations in Chaves County ranged up to 35 per 100 net strokes. There has been a considerable increase in Lygus populations in fields that have not been dusted. Dusting for bollworms continues on a rather large scale. The injurious hemipterous insect populations remain low in Eddy County. Most of the cotton fields in this county have been dusted from on to three times.

TEXAS: Hemipterous insedts increased in many cotton fields throughout the El Paso Valley. Sweepings average 10 injurious insects per 100 net strokes as compared to 5 the past week. Dusting for cotton insect control is being continued.

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